

Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

IN THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers, respectively:

Claims 1-27 (Cancelled) :

Claim 28 (Currently amended) : A chelate-forming filter comprising at least one of a natural fiber and a regenerated fiber, said fiber containing at least one chelate-forming functional group, said chelate-forming functional group being selected from:

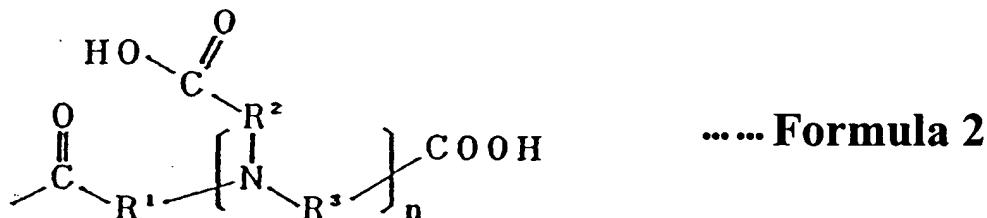
a group represented by formula 1 and having an amino group and at least two hydroxyl groups combined with carbon:



wherein G represents a residue of a chain sugar alcohol or a residue of a polyhydric alcohol, and R represents a hydrogen atom, a lower alkyl group or -G; and

Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

an acyl group represented by formula 2:



wherein each of R¹, R² and R³ represents a lower alkylene group, and n denotes an integer of 1 to 4.

Claim 29 (Currently amended): A chelate-forming filter according to claim 28, wherein G is a residue of a chain sugar alcohol lacking an amino group selected from the group consisting of D-glucamine, D-galactamine, D-mannosamine, D-arabitylamine, N-methyl-D-glucamine, N-ethyl-D-glucamine, N-methyl-D-galactamine, N-ethyl-D-galactamine, N-methyl-D-mannosamine and ~~N-ethyl-D-mannosamine~~ N-ethyl-D-arabitylamine and R is a hydrogen atom or a lower alkyl group, in the formula 1.

Claim 30 (Previously presented): A chelate-forming filter according to claim 28, wherein G is a dihydroxypropyl group, and R is a hydrogen or a lower alkyl group, in the formula 1.

Claim 31 (Previously presented): A chelate-forming filter

Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

according to claim 28, wherein said acyl group represented by the formula 2 is derived from at least one compound selected from the group consisting of nitrilotriacetic anhydride, ethylenediaminetetraacetic dianhydride, and diethylenetriaminepentaacetic dianhydride.

Claim 32 (Previously presented): A chelate-forming filter according to claim 28, wherein said chelate-forming fiber has a capability of capturing, as a chelate, a metalloid element or a compound thereof.

Claim 33 (Previously presented): A chelate-forming filter according to claim 32, wherein said metalloid element or a compound thereof is boron or a boron compound.

Claim 34 (Previously presented): A chelate-forming filter according to claim 28, wherein said chelate-forming fiber has a capability of capturing, as a chelate, a heavy metal element or a compound thereof.

Claim 35 (Previously presented): A chelate-forming filter according to claim 28, wherein an introduced amount of the

Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

chelate-forming functional group calculated by a following equation is greater than or equal to 10% by weight of the fiber,

$$\frac{\text{weight of fiber after reaction} - \text{weight of fiber before reaction}}{\text{weight of fiber before reaction}} \times 100 = \begin{array}{l} \text{Introduced} \\ \text{amount} \\ \text{weight} \\ \text{percent.} \end{array}$$

Claim 36 (Currently amended): A process for the purification of a liquid, comprising the steps of:

providing a device having a chelate-forming filter, the chelate-forming filter comprising at least one of a natural fiber and a regenerated fiber, said fiber containing at least one chelate-forming functional group, the chelate-forming functional group being selected from:

a group represented by formula 1 and having an amino group and at least two hydroxyl groups combined with carbon:



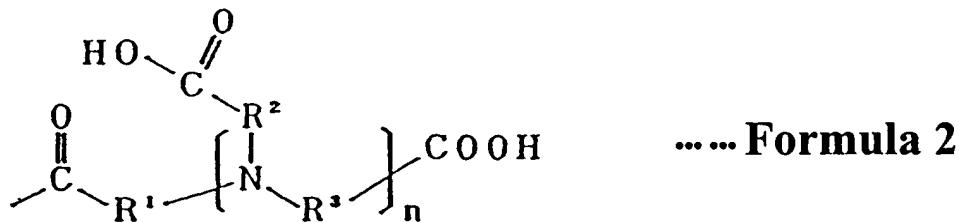
wherein G represents a residue of a chain sugar alcohol or a residue of a polyhydric alcohol, and R represents a hydrogen atom, a lower alkyl group or -G; and

an acyl group represented by formula 2:

Application No.: 09/674,167

Amendment under 37 CFR 1.111

Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004



wherein each of R¹, R² and R³ represents a lower alkylene group, and n denotes an integer of 1 to 4; and

passing the liquid through the chelate-forming filter to concurrently remove ionic substances and insoluble impurities from the liquid.

Claim 37 (Previously presented): A process for the purification of a liquid according to claim 36, wherein said step of passing the liquid through the chelate-forming filter includes passing an aqueous liquid or an oily liquid through the chelate-forming filter.

Claim 38 (Currently amended): A process for producing a chelate-forming filter, comprising the steps of:

providing at least one of a natural fiber and/or and a regenerated fiber into a filter, said fiber having a functional group;

reacting the functional group with:

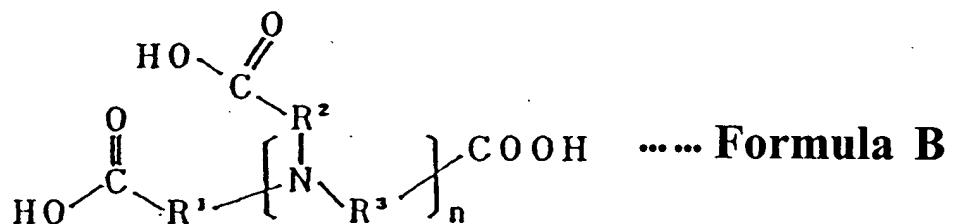
Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

an amine compound represented by formula A and having an amino group and at least two hydroxyl groups combined with carbon:



wherein G represents a residue of a chain sugar alcohol or a residue of a polyhydric alcohol, and R represents a hydrogen atom, a lower alkyl group or -G; and/or

an acid anhydride of a polycarboxylic acid represented by formula B:



wherein each of R¹, R², and R³ represents a lower alkylene group, and n denotes an integer of 1 to 4,

to thereby introduce a chelate-forming functional group into the fiber.

Claim 39 (Previously presented): A process for producing a chelate-forming filter according to claim 38, wherein said step

Application No.: 09/674,167
Amendment under 37 CFR 1.111
Reply to Notice of Non-Compliant Amendment dated July 6, 2004
July 21, 2004

of reacting the functional group fiber includes using a cross-linking agent.

Claim 40 (Previously presented): A process for producing a chelate-forming filter according to claim 38, wherein the amine compound represented by the formula A is at least one compound selected from the group consisting of D-glucamine, N-methyl-D-glucamine, and dihydroxypropylamine.

Claim 41 (Previously presented): A process for producing a chelate-forming filter according to claim 38, wherein the acid anhydride of polycarboxylic acid represented by the formula B is at least one compound selected from the group consisting of nitrilotriacetic anhydride, ethylenediaminetetraacetic dianhydride, and diethylenetriaminepentaacetic dianhydride.

Claims 42 and 43 (Cancelled) :